WHAT IS CLAIMED IS:

1. A process for preparing an ether-capped poly(oxyalkylated) alcohol having the formula:

$$RO(R^1O)_xCH(CH_3)OR^2$$

wherein, R is selected from the group consisting of linear or branched, saturated or unsaturated, substituted or unsubstituted, aliphatic or aromatic hydrocarbon radicals having from about 1 to about 30 carbon atoms; R^1 may be the same or different, and is independently selected from the group consisting of branched or linear C_2 to C_7 alkylene in any given molecule; x is a number from 1 to about 30; and R^2 is selected from the group consisting of:

(i) a 4 to 8 membered substituted, or unsubstituted heterocyclic ring containing from 1 to 3 hetero atoms; and

(ii) linear or branched, saturated or unsaturated, substituted or unsubstituted, cyclic or acyclic, aliphatic or aromatic hydrocarbon radicals having from about 1 to about 30 carbon atoms;

provided that when R^2 is (ii) then either at least one of R^1 is other than C_2 to C_3 alkylene or R^2 has from 6 to 30 carbon atoms;

comprising the steps of:

(a) providing a vinyl ether of the formula

$$R^2OCH=CH_2$$

wherein R^2 is as defined above;

(b) providing an alkoxylated alcohol of the formula

$$RO(R^1O)_xH$$

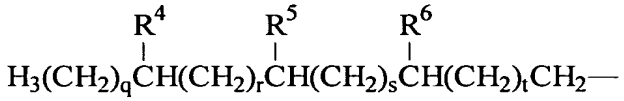
wherein R, R^1, and x, are as defined above;

(c) reacting said vinyl ether with said alkoxylated alcohol in the presence of a catalyst to form said ether-capped poly(oxyalkylated) alcohol.

2. The process as claimed in Claim 1 wherein R is a linear or branched, saturated or unsaturated, substituted or unsubstituted, aliphatic hydrocarbon radical having from about 1 to about 20 carbon atoms.

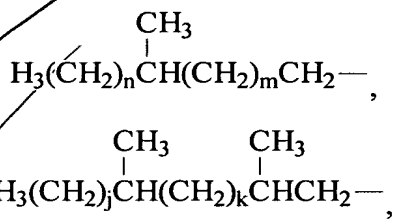
3. The process as claimed in Claim 2 wherein R is a linear or branched, saturated, aliphatic hydrocarbon radicals having from about 4 to about 18 carbon atoms.

4. The process as claimed in Claim 1 wherein R has the formula:



wherein R^4, R^5, and R^6 are each independently selected from hydrogen, C_1-C_3 alkyl, and mixtures thereof, provided that R^4, R^5, and R^6 are not all hydrogen and, when t is 0, at least R^4 or R^5 is not hydrogen; q, r, s, t are each independently integers from 0 to 13.

5. The process as claimed in Claim 4 wherein R has the formula:



wherein n, m, j and k are each independently integers from 0 to 13.

6. The process as claimed in Claim 1 wherein R^2 is a hydrocarbon radical of the formula:

wherein R^3 is selected from the group consisting of linear or branched, saturated or unsaturated, substituted or unsubstituted, aliphatic or aromatic hydrocarbon radicals having from about 1 to about 30.

7. The process as claimed in Claim 6 wherein R^3 is CH_3CH_2.

8. The process as claimed in Claim 1 wherein R^2 is a 7 to 13 membered substituted, or unsubstituted polycyclic ring.

9. The process as claimed in Claim 8 wherein R^2 is selected from the group consisting of substituted, or unsubstituted adamantane, substituted, or unsubstituted norbornane, substituted, or unsubstituted nortricyclene, and substituted, or unsubstituted bicyclo[2.2.2]octane.

10. The process as claimed in Claim 1 wherein R is selected from the group consisting of linear or branched, aliphatic hydrocarbon radicals having from about 7 to about 11 carbon atoms; x is a number from 6 to about 10; and R^2 is selected from the group consisting of a hydrocarbon radical of the formula:

$$—C(CH_3)_2R^3$$

wherein R^3 is selected from the group consisting of linear or branched, aliphatic radicals having from about 2 to about 5 carbon atoms.

11. The process as claimed in Claim 1 wherein said catalyst is selected from the group consisting of mineral acids and Lewis acids.

12. The process as claimed in Claim 1 wherein said catalyst is selected from the group consisting of $TiCl_2$, $Ti(O^iPr)_4$, $ZnCl_4$, $SnCl_4$, $AlCl_3$, BF_3-OEt_2, poly(4-vinylpyridinium p-toluenesulfonate), DOWEX 50X8-50, H-Y Zeolite, REILLEX 425, pyridinium p-toluenesulfonate, AMBERLYST®15 p-toluenesulfonic acid, methanesulfonic acid and mixtures thereof.

13. The process as claimed in Claim 1 wherein about 0.1 mol % to about 20.0 mol % of said catalyst is used in said step (c).

14. The process as claimed in Claim 1 wherein said step of reacting of alcohol with alkoxylated alcohol is conducted in the presence of a solvent.

15. The process as claimed in Claim 14 wherein said solvent is selected from the group consisting of benzene, toluene, xylene, mesitylene, dichloromethane, tetrahydrofuran, diethylether, methyl tert-butylether, acetone, acetonitrile, and mixtures thereof.

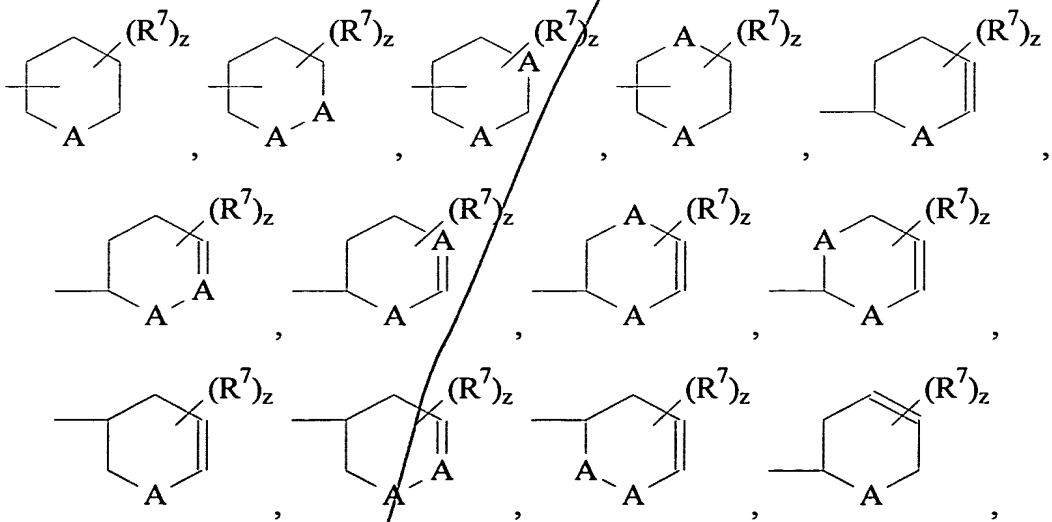
16. The process as claimed in Claim 1 wherein said step of reacting alcohol with alkoxylated alcohol is conducted as a temperature of from about -20°C to about 300°C.

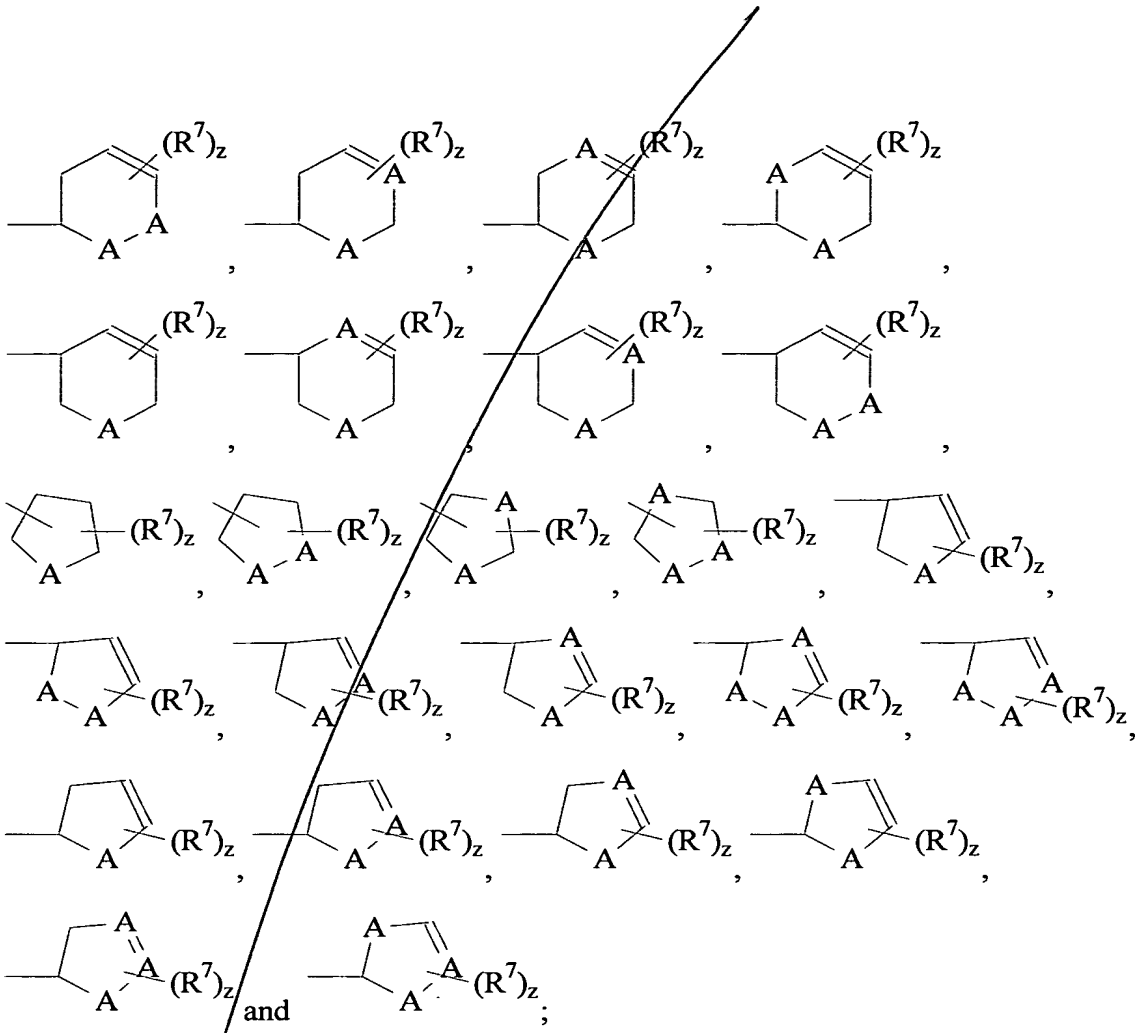
17. The process as claimed in Claim 1 wherein said step of reacting alcohol with alkoxylated alcohol is conducted in the absence of a solvent.

18. The process as claimed in Claim 1 wherein R^2 is a 4 to 8 member substituted, or unsubstituted heterocyclic ring containing from 1 to 3 hetero atoms.

19. The process as claimed in Claim 18 wherein said heterocycle is a 5 or 6 member heterocycle.

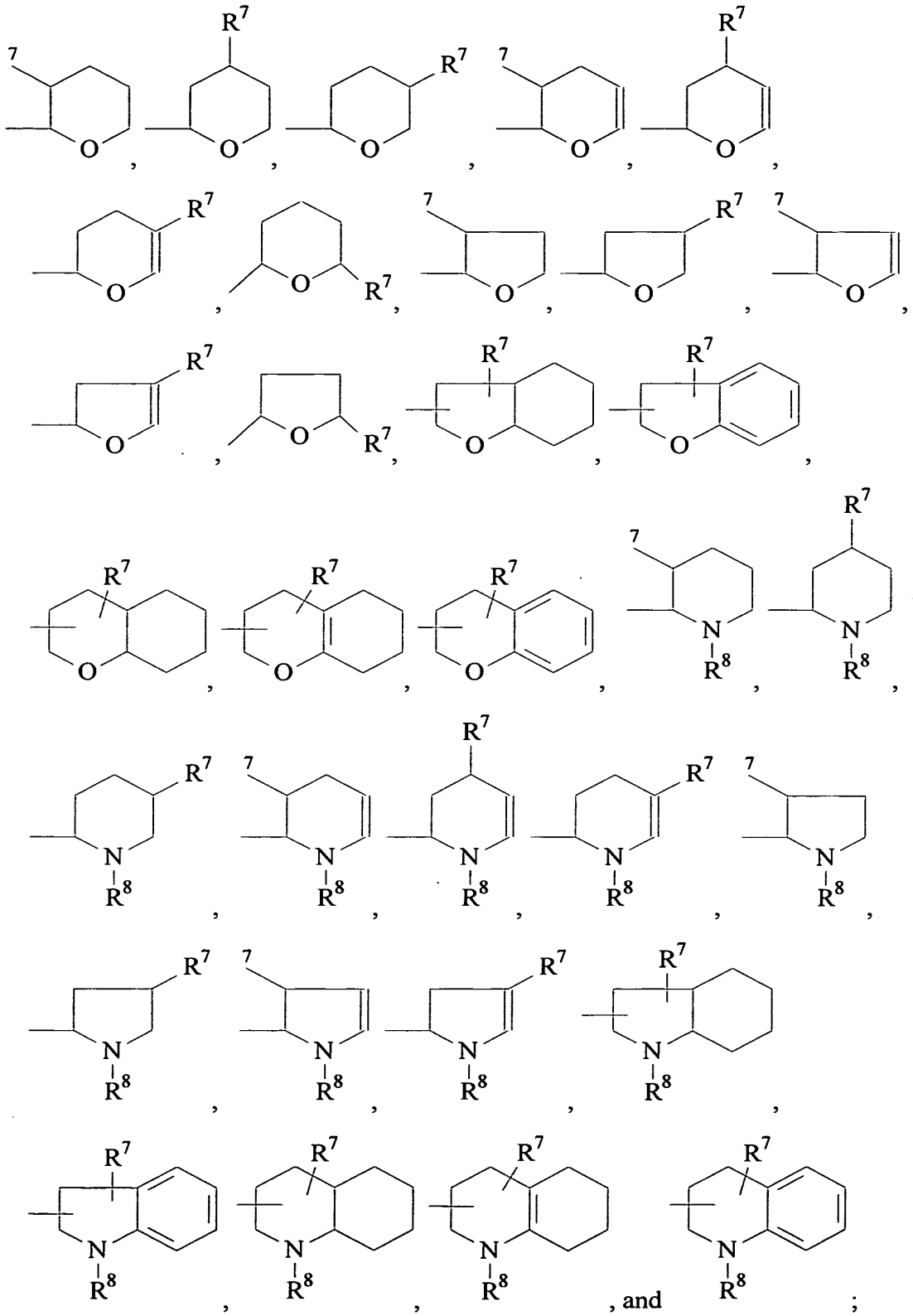
20. The process as claimed in Claim 18 wherein said heterocycle is selected from the group consisting of:





wherein each R^7 is independently selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated, substituted or unsubstituted, aliphatic hydrocarbon or alkoxy radical having from about 1 to about 10 carbon atoms, or R^7 is a saturated or unsaturated, substituted or unsubstituted, alicyclic or aromatic hydrocarbon or alkoxy radical having, from about 1 to about 10 carbon atoms, which is fused to the heterocyclic ring; each A is independently selected from the group consisting of O, and $N(R^8)_a$, wherein R^8 is independently selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated, substituted or unsubstituted, aliphatic hydrocarbon radical having from about 1 to about 10 carbon atoms, and a is either 0 or 1; z is an integer from 1 to 3.

21. The process as claimed in Claim 20 wherein said heterocycle is selected from the group consisting of:

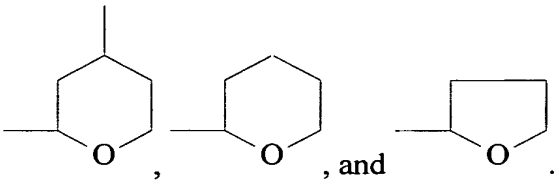


, and ;

wherein R^7 and R^8 are defined as above.

22. The process as claimed in Claim 1 wherein said ether-capped poly(oxyalkylated) alcohol contains a chiral center.

23. The process as claimed in Claim 20 wherein said heterocycle is selected from the group consisting of:



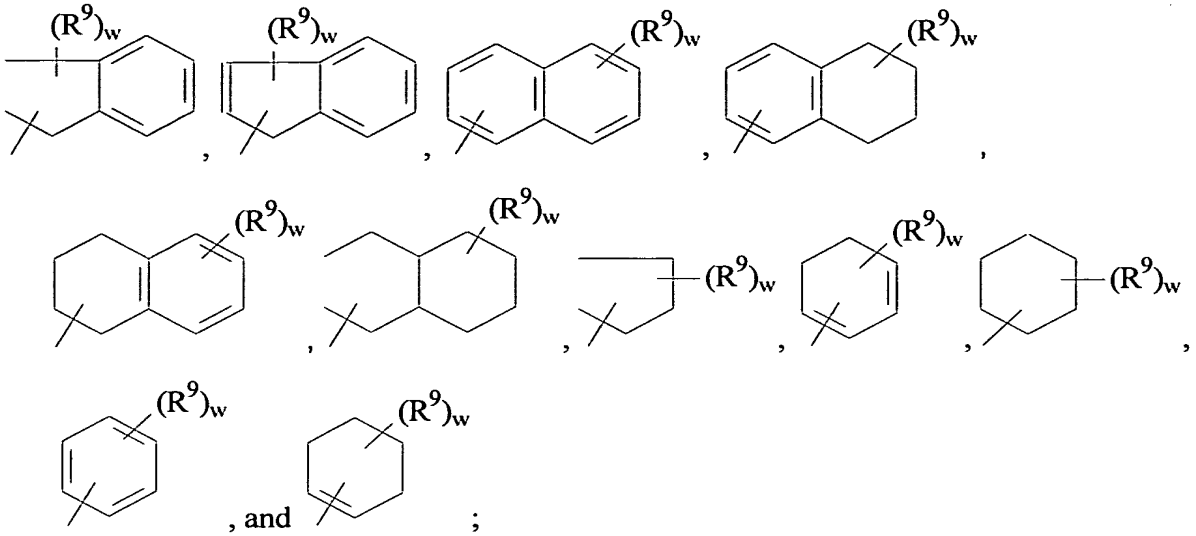
24. The process as claimed in Claim 1 wherein R^2 is a hydrocarbon of the formula:

$$-(CH_2)_y-X$$

wherein, y is an integer from 0 to 7: and X, is a 4 to 8 membered substituted, or unsubstituted, partially unsaturated cyclic or aromatic hydrocarbon radical.

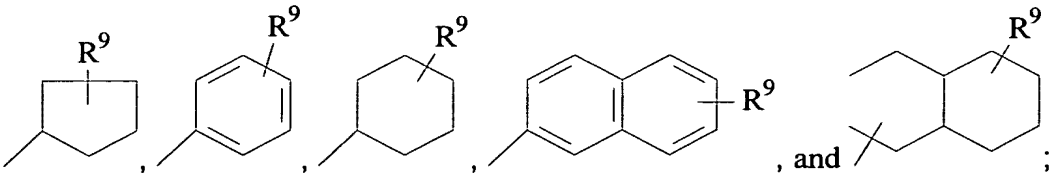
25. The process as claimed in Claim 24 wherein y is 0 and X, is a 5 or 6 membered substituted, or unsubstituted, saturated or unsaturated cyclic or aromatic hydrocarbon radical.

26. The process as claimed in Claim 24 wherein X is selected from the group consisting of:



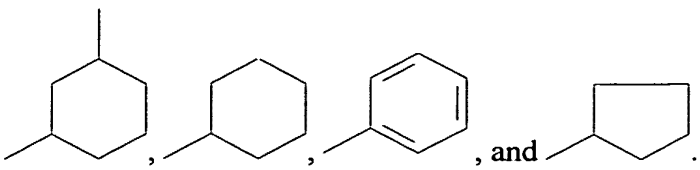
wherein each R^9 is independently selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated, substituted or unsubstituted, aliphatic hydrocarbon or alkoxy radical having from about 1 to about 10 carbon atoms, or R^9 is a saturated or unsaturated, substituted or unsubstituted, alicyclic or aromatic hydrocarbon radical having, from about 1 to about 10 carbon atoms, which is fused to the ring; w is an integer from 1 to 3.

27. The process as claimed in Claim 26 wherein X is selected from the group consisting of:



wherein R^9 is defined as above.

28. The process as claimed in Claim 26 wherein X is selected from the group consisting of:

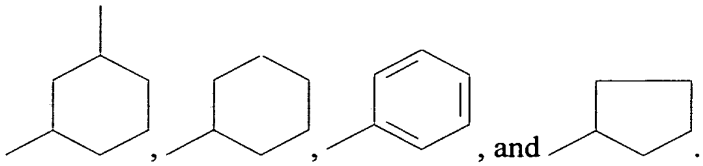


29. The process as claimed in Claim 1 wherein R is selected from the group consisting of linear or branched, aliphatic hydrocarbon radicals having from about 7 to about 11 carbon atoms; x is a number from 6 to about 10; and R^2 is selected from the group consisting of a hydrocarbon radical of the formula:

$$—(CH_2)_y—X$$

wherein y is 0 and X, is a 5 or 6 membered substituted, or unsubstituted, saturated or unsaturated cyclic or aromatic hydrocarbon radical.

30. The process as claimed in Claim 29 wherein X is selected from the group consisting of



31. The process as claimed in Claim 1 wherein said process further comprises step

(d) quenching the reaction of step (c) by the addition of a base.

32. The process as claimed in Claim 31 wherein said base is selected from the group consisting of alkali metal carbonates, alkali metal hydroxides, alkali metal alcoholates, alkanolamines, alkyl amines, aromatic amines, and mixtures thereof.

33. The process as claimed in Claim 32 wherein said base is selected from the group consisting of potassium carbonate, sodium carbonate, sodium methoxylate, sodium ethoxylate, potassium *tert*-butyloxylate, triethylamine, triethanolamine and mixtures thereof.

34. The process as claimed in Claim 32 wherein said base is an aqueous solution.

35. The process as claimed in Claim 32 wherein said base is an aqueous solution selected from the group consisting of sodium carbonate, potassium carbonate and mixtures thereof and said aqueous solution is at a temperature of from about 20°C to about 60°C.

36. The process as claimed in Claim 31 wherein the mixture produced by step (d) comprises at least 90% by weight of said ether-capped poly(oxyalkylated) alcohol.

37. The process as claimed in Claim 1 wherein said process further comprises
(e) removal of color bodies and odors from the product of step (c).

38. The process as claimed in Claim 37 wherein in said step (e) removal of color bodies and odors from the product of step (c) is by contacting the product of step (c) with at least one reagent selected from the group consisting of an oxidant and a reductant.

39. The process as claimed in Claim 38 wherein in said oxidant is an hydrogen peroxide.

40. The process as claimed in Claim 38 wherein in said reductant is either sodium borohydride, or hydrogen over a palladium/carbon catalyst.

41. The process as claimed in Claim 1 wherein said ether-capped poly(oxyalkylated) alcohol surfactant produced in said step (c) is removed from the product of step (c) by centrifuging.

42. An ether-capped poly(oxyalkylated) alcohol surfactant produced by a process as claimed in Claim 1.

43. A composition comprising an ether-capped poly(oxyalkylated) alcohol surfactant produced by a process as claimed in Claim 1.